Alliance for Innovation Newsletter

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City of Wichita, KS Meeting the Demands of a Growing Community

The **City of Wichita, KS (pop. 400,000)** has implemented a unique plan that is intended to meet the city's water supply needs through the year 2050. Dubbed the Integrated Local Water Supply Plan, the city's Plan uses a variety of local water resources to help meet water needs projected to almost double by 2050.

"This project represents a new approach to developing water resources, while at the same time protecting an existing water resource from contamination," said Kristi McMinnville, Senior Management Analyst.

Wichita's search for future water supplies dates back to the 1980's; the Integrated Local Water Supply Plan was approved in 1993. The Plan creates a win-win situation in which the city's water supply needs are met through 2050, water quality is protected from contamination, and irrigators experience lower pumping costs, among many other Plan benefits.

Major components of Wichita's Plan include:

- Greater use of Cheney Reservoir (the city's existing surface water supply)
- Conservation (a goal of 15%)
- Use of an Aquifer Storage and Recovery system in the Equus Beds Aquifer (100 million gallons per day (mgd) recharge capacity)
- Re-development of the Bentley Wellfield (10 mgd)
- Expansion of Local Wellfield (45 mgd)
- Additional raw water pipelines
- An additional water treatment plant (65 mgd)

A five-year demonstration project was implemented to prove the feasibility of the concepts in the Water Supply Plan. To prove that recharging the aquifer was safe, over 4,000 water samples were collected and analyzed for up to 400 different potential contaminates.

More than one billion gallons of water were successfully recharged into the aquifer during the Demonstration Project, which proved that excess flows in the Little Arkansas River could be captured and recharged, without harming the aquifer.

Phase I of the recharge project was completed in September 2006. This phase has the capacity to capture and recharge up to 10 mgd, and the recharge sites are located so that the city can start to build a hydraulic barrier to the movement of salt-water contamination left over from the development of oil wells in the Burton area during the 1930's.

The project included three Bank Storage diversion wells, a seven mgd surface water intake, a seven mgd surface water treatment plant, four recharge wells, two recharge basins, and 14 miles of new water lines and overhead power lines. The full-scale project, which will be constructed in phases, will capture and recharge up to 100 mgd, and will cost approximately $200 million. All of the water that is recharged into the aquifer must meet drinking water standards, so it will be monitored and regulated by the Kansas Department of Health and Environment and the Environmental Protection Agency.

The project is expected to benefit all users of the Equus Beds by adding up to 65 billion gallons of water to the aquifer for use to meet the city's demands and by protecting the aquifer from water quality deterioration due to the intrusion of natural and manmade sources of salt water.

The project is also expected to reduce power costs for pumping, for both the city and irrigators, due to higher groundwater levels.

For more information, contact Kristi McMinnville at kmcminnville@wichita.gov.